

**REMARKS**

Applicants submit this Amendment, Petition for Extension of Time - Three Months, and Request for Continued Examination in reply to the final Office Action mailed July 12, 2006.

By this Amendment, Applicants amend independent claim 13 to further define the claimed invention. The originally-filed specification, claims, abstract, and drawings fully support the subject matter of amended claim 13. No new matter is introduced.

Claims 13-15 and 17-18 are pending in this application. Claim 13 is the sole independent claim.

On page 2 of the Office Action, claims 13, 15, 17, and 18 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,958,265 to Ogahara ("Ogahara "). Applicants respectfully traverse this rejection.

Ogahara does not disclose the invention as set forth in independent claim 13. For example, independent claim 13 recites a plasma processing apparatus that performs plasma processing on a workpiece placed on an electrode provided inside a processing chamber including, among other aspects, "a thermal conductivity adjusting member, for adjusting a thermal conductivity between the electrode and the electrically conductive ring body, provided between said electrode and said electrically conductive ring body, attached to a whole area of a bottom surface of said electrically conductive ring body; and a means for pressure application for applying a pressure through the thermal conductive adjusting member to raise the thermal conductivity between said electrode and said electrically conductive ring body and is capable of adjusting the level

of the pressure.” Ogahara does not disclose or suggest any of these aspects either alone or in combination with other aspects of independent claim 13.

Page 2 of the Office Action asserts that main block 3, contact sheet material 4, characteristic correction ring 9, and ring chucking electrode 91 respectively correspond to the electrode, thermal conductivity adjusting member, electrically conductive ring body, and means for pressure application of independent claim 13. Even assuming *arguendo* that this is correct, Ogahara does not disclose “a thermal conductivity adjusting member... attached to a whole area of a bottom surface of said electrically conductive ring body.” Indeed, as shown in Figs. 1-4 of Ogahara, contact sheet material 4 is not attached to any portion of a bottom surface of character, let alone the “whole area of a bottom surface” as set forth in independent claim 13.

Moreover, page 4 of the Office Action asserts the following:

Applicant argues that there is a gap between contact sheet material 4 and characteristic correction ring.

This is not corrected since Ogahara explains the placement of contact sheet material in the gap (Col 1 lines 52-63) so that after the placement there is no gap left.

The Office Action misunderstands Ogahara. Col. 1, lines 52-63 of Ogahara recites that contact sheet material 4 is placed in the gap between main block 3 and substrating holding plate 2. However, Applicants argue that a gap is shown in Figs. 1-4 of Ogahara between contact sheet material 4 and characteristic correction ring 9, i.e., the alleged thermal conductivity adjusting member and electrically conductive ring body. This is relevant because independent claim 13 recites an attachment between the thermal conductivity adjusting member and the electrically conductive ring body, which would not be shown in Ogahara if there is a gap between the alleged thermal conductivity

adjusting member and electrically conductive ring body, i.e., between contact sheet material 4 and characteristic correction ring 9.

Furthermore, ring chucking electrode 91 is an electrically absorptive element embedded in substrate holding plate 2 and disposed adjacent to characteristic correction ring 9. (Col. 8, lines 4-10). Such absorption by ring chucking electrode 91 is implemented without going through contact sheet material 4, which is contrary to the aspect of independent claim 13, which recites "a means for pressure application for applying a pressure through the thermal conductive adjusting member to raise the thermal conductivity between said electrode and said electrically conductive ring body and is capable of adjusting the level of the pressure." In reply to this contention, the Office Action recites the following at page 4, lines 11-20:

It is noted from the specification (Paragraph 77 of the Publication US 2005/0172904) that the adjusting member 408 is bonded to the conductive member 404 by adhesive so that the pressure exerted by fastener improves to improve contact between the conductive ring and the supporting electrode. In the reference of Ogahara exactly the same thing is done. The electrostatic pressure improves the contact of the correction ring to the electrode not only through the electrostatic chuck part but also through the feet of the ring. Further Ogahara teaches mechanical pressure device as an alternative, which would apply pressure directly through sheet 4. The description at (Col 6 lines 21-45) makes the objective of improving the contact of the correction ring to the main body very clear. Therefore the disclosed structure would at least be an obvious variation.

Applicants do not understand the relevance of Applicants' disclosure to the current rejections. The fact that certain structures in the cited reference may serve the same purpose as certain structures in the claimed invention are irrelevant. Unless the same structure recited in the claims, in this case independent claim 13, is shown in the cited reference, a showing which has not been made here, a rejection under 35 U.S.C.

§ 102(e) is improper. As for the alleged mechanical alternative, while col. 6, lines 21-45 does recite a variety of mechanisms to press characteristic correction ring 9 against holder main body 1, not only does Ogahara not cite which part of holder main body 1 that characteristic correction ring 9 is pressed up against, but it is not *necessarily* true, as is required for a showing of inherency, that such pressure would be applied through contact sheet material 4, i.e., the alleged thermal conductivity adjusting member. If the Office Action's intent is to make an obviousness rejection, Applicants assert that an additional Office Action, with such a rejection specifically asserted, is necessary.

Moreover, Applicants also dispute the implicit contention, on page 4, lines 10-20 of the final Office Action, that the alleged objective in Ogahara of improving the contact of the correction ring to the main body is the same as the alleged objective of the invention set forth in independent claim 13. To the contrary, Ogahara discloses a structure where a "shoulder" of characteristic correction ring 9 contacts substrate holding plate 2, and the "feet" of characteristic correction ring 9 contacts main block 3. Ogahara discloses that substrate holding plate 2 is made of  $\text{Al}_2\text{O}_3$  (col. 2, line 42) and main body 3 is made from aluminum or stainless steel (col. 3, lines 48-49). This is relevant because, typically, the temperature in the plasma processing apparatus is equal to or greater than 100 C during plasma processing. At such temperatures, the differences in thermal expansion coefficients between  $\text{Al}_2\text{O}_3$  and aluminum or stainless steel come into play. Specifically, because the thermal expansion coefficient of the aluminum or stainless steel of main body 3 is greater than the thermal expansion coefficient  $\text{Al}_2\text{O}_3$  of substrate holding plate 2, when pressure is applied to the "shoulder" of characteristic correction ring 9 due to the application of voltage to electrostatic

chucking conductor 91, a large force ends up being applied between the “feet” of characteristic correction ring 9 and main body 3 due to the difference in the thermal expansion coefficients of  $\text{Al}_2\text{O}_3$  and aluminum or stainless steel. As a result, characteristic correction ring 9 may crack.

By contrast, independent claim 13 recites “a thermal conductivity adjusting member, for adjusting a thermal conductivity between the electrode and the electrically conductive ring body, provided between said electrode and said electrically conductive ring body, attached to a whole area of a bottom surface of said electrically conductive ring body.” Accordingly, no such crack would form because the thermal conductivity adjusting member serves as a buffer. Such an advantage is not disclosed by Ogahara.

Accordingly, for at least these reasons, Applicants respectfully request withdrawal of the Section 102(e) rejection based on Ogahara.

On page 3 of the Office Action, claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ogahara in view of U.S. Patent No. 5,919,332 to Koshiishi et al. (“Koshiishi”). Applicants respectfully traverse this rejection at least because the Office Action has not shown how Koshiishi remedies the aforementioned deficiencies of Ogahara as required to establish a case of *prima facie* obviousness. Accordingly, Applicants respectfully request withdrawal of the Section 103(a) rejection based on Ogahara and Koshiishi.

Applicants further submit that claims 14-15 and 17-18 depend from independent claim 13, and is therefore allowable for at least the same reasons that the independent claim is allowable. In addition, each of the dependent claims recite unique

combinations that are neither taught nor suggested by the cited references and therefore each also are separately patentable.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification and claims in this Amendment, it is to be understood that Applicant is in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

If there is any fee due in connection with the filing of this Amendment, please  
charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: January 11, 2007

By: 

Michael W. Kim  
Reg. No. 51,880